Check List the journal of biodiversity data

NOTES ON GEOGRAPHIC DISTRIBUTION

Check List 11(5): 1738, 15 September 2015 doi: http://dx.doi.org/10.15560/11.5.1738
ISSN 1809-127X © 2015 Check List and Authors

# Range extension of *Oxymycterus wayku* (Mammalia: Rodentia: Cricetidae), an endemic species from austral Yungas, and first record for Catamarca province, northwestern Argentina

**Sofía d'Hiriart**[1*], **Pablo E. Ortiz**[2, 3], **Candela Russo**[2] and **J. Pablo Jayat**[1, 4]

1 Instituto de Ambiente de Montaña y Regiones Áridas (IAMRA), Universidad Nacional de Chilecito (UNdeC). CP: F5360CKB, Chilecito, La Rioja, Argentina
2 Facultad de Ciencias Naturales e Instituto Miguel Lillo, Universidad Nacional de Tucumán, Miguel Lillo 205, 4000 San Miguel de Tucumán, Tucumán, Argentina
3 Instituto Superior de Correlación Geológica (INSUGEO, CONICET), Miguel Lillo 205, 4000 San Miguel de Tucumán, Tucumán, Argentina
4 Instituto de Ecología Regional, Laboratorio de Investigaciones Ecológicas de Las Yungas (IER- LIEY). CC 34, Yerba Buena, Tucumán, Argentina
* Corresponding author. E-mail: sofiadiriart@gmail.com

**Abstract:** *Oxymycterus wayku* Jayat, D'Elía, Pardinãs, Miotti & Ortiz, 2008, a rodent species recently described, is known in only four localities within the Subtropical Mountain Forests of the Yungas eco-region in Tucumán, northwestern Argentina. Specimens were recorded in an owl pellet sample during a recent survey. This record represents the first for *Oxymycterus* in Catamarca Province, extending approximately 60 km south its southern distribution in the region. Sixteen other small non-volant mammal species were recorded there, turning this area into one of the most diverse for this understudied group in Argentina.

**Key words:** Sigmodontinae, geographic distribution, northwestern Argentina, small non-volant mammals, new record

The rodent genus *Oxymycterus* Waterhouse, 1837, is a diverse and widely distributed group of the tribe Akodontini (Pardiñas et al. 2006; Jayat et al. 2008a), ranging from the Amazon Basin (Hershkovitz 1994) to central Argentina (Buenos Aires Province), and Uruguay. Only three nominal species have been mentioned for northwestern Argentina: *O. akodontius* Thomas 1921, *O. paramensis* Thomas 1902, and *O. wayku* Jayat, D'Elía, Pardiñas, Miotti, and Ortiz, 2008 (Thomas 1921, 1925; Barquez 1976; Díaz et al. 2000; Díaz and Barquez 2007; Jayat et al. 2008a, 2008b). However, Oliveira and Gonçalves (2015) considered *O. akodontius* as synonym of *O. paramensis*.

*Oxymycterus wayku* is restricted to southern Yungas, in Tucumán province, where it has only been recorded at four localities on the humid eastern slopes of Cumbres Calchaquíes and Sierra del Aconquija (Jayat et al. 2008a). This species probably lives only in a narrow belt of humid forest, from about 800 m elevation in Selva Montana (*sensu* Brown et al. 2001) to the ecotone between *Alnus* woodland (Bosque Montano; *sensu* Brown et al. 2001) and highland grasslands, at about 2200 m elevation (Jayat et al. 2008a). This environment extends continuously to neighboring southern Salta province and southern Catamarca province. In this work, we recorded the species for the first time in Catamarca province, extending its southern distribution, and adding the genus *Oxymycterus* to the mammal fauna of an additional province in Argentina.

The studied specimens were recovered from a pellet sample of *Tyto alba* (Aves, Strigiformes, Tytonidae) collected in December 2013 from a small gully beside the Highway 1, approximately 3 km north of Las Chacritas (27°38′19″ S, 065°57′30″ W, 2,025 m elevation), Catamarca province, Argentina (Figure 1). The specimens were identified using literature (Jayat et al. 2008a; Ortiz and Jayat 2013) and by comparison with reference material housed at the following scientific collections: Colección Mamíferos Lillo (CML), Tucumán, Argentina; Colección de Material de Egagrópilas del Instituto Superior de Correlación Geológica (CEI), Tucumán, Argentina; Colección de Mamíferos del Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" (MACN), Buenos Aires, Argentina; Colección de Mastozoología del Centro Nacional Patagónico (CNP), Puerto Madryn, Argentina; and personal collection of one of the authors

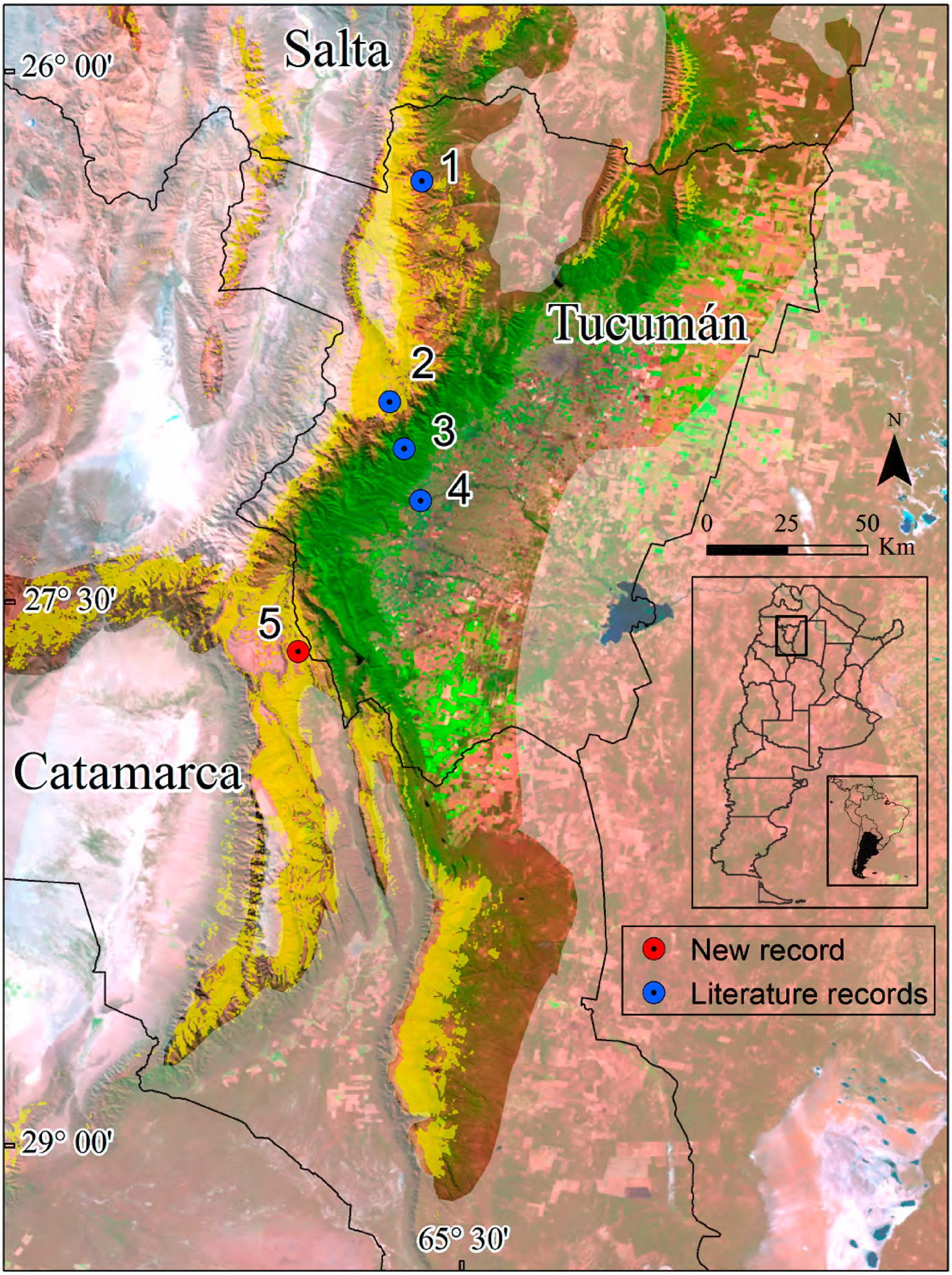


**Figure 1.** Collection localities of *Oxymycterus wayku* in northwestern Argentina. Blue dots: records obtained from the literature (Jayat et al. 2008a, 2008b); red dot: new record. Tucumán province: (1) 10 km by road south of Hualinchay on the trail to Lara; (2) La Angostura; (3) Los Sosa; and (4) Reserva Provincial La Florida. Catamarca province: (5) 3 km north of Las Chacritas. Unshaded areas represent Yungas Ecoregion (*sensu* Brown et al., 2001) and yellow ones delineate high altitude grasslands.

(JPJ; to be deposited in the MACN) (Appendix 1). The specimens collected are deposited at the CEI collection under the number 102-6.

The studied specimens, corresponding to one fragmented skull and one left hemimandible, were identified as *O. wayku* based on cranial and mandibular morphology and morphometric values (Figure 2; Table 1). Diagnostic characters of *O. wayku* such as short incisive foramina, wide and shallow zygomatic notches, and asymmetrical lunar notch in mandible were evident in our specimens. These traits allowed us to clearly distinguish the recovered specimens from *O. paramensis,* the other species that inhabits the southern Yungas. The examined fragments of skull present wider and shallower zygomatic notches and shorter incisive foramina in comparison with *O. paramensis*. Furthermore, in CEI 102-6 the sigmoid notch is narrower and shallower and the lunar notch is clearly more asymmetrical, as observed in *O. wayku* (Jayat et al. 2008a; Ortiz and Jayat 2013) (Figure 2).

**Figure 2.** Remains of *Oxymycterus wayku* (CEI 102-6, new record) from a small ravine beside the Highway 1, approximately 3 km north of Las Chacritas (27°38′19″ S, 065°57′30″ W, 2,025 m elevation), Catamarca province, Argentina. **A:** Incomplete skull in lateral view. **B:** Incomplete skull in ventral view. **C:** Left hemimandible in lateral view. Scale bar: 10 mm.

*Oxymycterus wayku* has been cited for the following Argentine localities, all in Yungas forest in Tucumán Province: approximately 10 km south of Hualinchay, on the road to Lara, 2,316 m elevation (26°19′20″ S, 065°36′45″ W; type locality; CML 7247, 7248, 7249, 7250; CNP 853, 854); Pueblo Viejo, Reserva Provincial La Florida (27°13′ S, 065°37′ W; at approximately 1,000 m elevation; CML 6096); Los Sosa (27°04′13″ S, 065°39′43″ W, 860 m elevation; MACN 20254), and La Angostura (26°56′25″ S, 065°42′10″ W, at about 1,900 m elevation; CEI 1-3, 2-3, 4-3). The new record extends the known range of this species approximately 60 km south, constituting the southernmost record for *Oxymycterus* on the Andean range, and the first reliable mention of the genus in Catamarca Province. Mares et al. (1997) cited the presence of *Oxymycterus* in this province (as *O. akodontinus* [*sic*]), but the specimen (MACN 50.434) was posteriorly assigned to *Abrothrix illutea* by Jayat et al. (2006) (see also Pardiñas et al., 2006).

The collecting site is situated on the bottom of a small valley, aligned along a north–south axis, that is surrounded by Sierra de Narváez (2,450 m elevation) to the east and a lower range (2,200 m) to the west. Annual mean temperature and precipitation are variable depending on

**Table 1.** Comparative measurements of adult specimens (age classes 4 and 5 based on García-Olaso [2008]) of *Oxymycterus wayku* and *Oxymycterus paramensis*. Measurements were taken from specimens deposited in the following collections: CEI, MACN and CML (Appendix 1). The following skull measurements were taken following Hershkovitz (1962) and Myers et al. (1990): DL: diastema length, RW2: mid rostral width, MTRL: maxillary toothrow length, IFL: incisive foramen length, IOC: interorbital constriction, NL: nasal length, RL: rostral length, ZP: zygomatic plate depth, ML: length of the mandible, MdMTRL: mandible toothrow length and MdDL: mandible diastema length.

| | *Oxymycterus wayku* | | | *Oxymycterus paramensis* | |
|---|---|---|---|---|---|
| | **CEI 102-6 Age class 4** | **MACN 20254 Age class 4** | **CML 7250 Age class 4** | ***n*** | **$\bar{x} \pm$ SD** |
| DL | 8.34 | 8.04 | 8.06 | 11 | 7.91 (7.36–8.80) |
| RW2 | 6.50 | 6.52 | 6.18 | 11 | 5.84 (5.44–6.30) |
| MTRL | 5.06 | 4.70 | 4.90 | 11 | 5.19 (4.88–5.52) |
| IFL | 6.29 | 6.00 | 5.62 | 11 | 6.99 (6.54–7.36) |
| IOC | 6.22 | 5.62 | 6.14 | 11 | 6.15 (5.96–6.40) |
| NL | 12.48 | 13.10 | 12.50 | 11 | 13.46 (12.54–13.86) |
| RL | 14.28 | 14.84 | 14.24 | 11 | 14.56 (13.50–15.24) |
| ZP | 2.57 | 2.36 | 2.48 | 11 | 2.63 (2.22–3.06) |
| ML | 17.62 | 17.88 | 17.62 | 11 | 17.26 (15.84–18.56) |
| MdMTRL | 5.24 | 4.92 | 4.96 | 11 | 5.24 (5.00–5.26) |
| MdDL | 4.04 | 4.28 | 3.68 | 11 | 3.73 (3.00–4.50) |

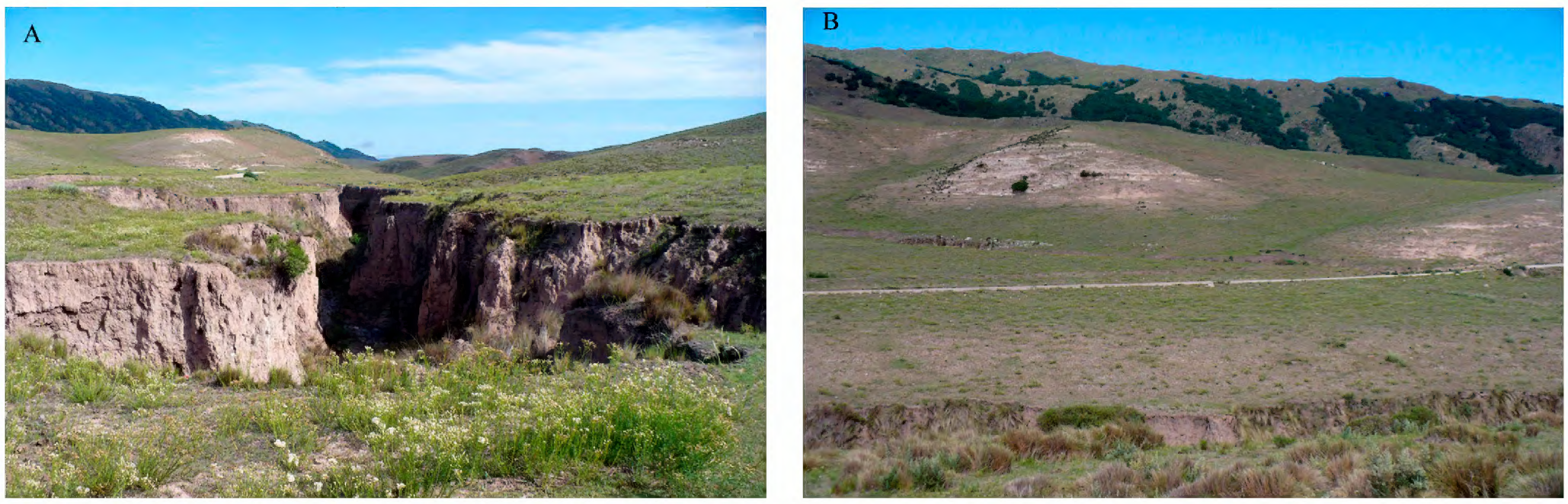


**Figure 3.** Panoramic view of the first collection locality of *Oxymyxterus wayku* in Catamarca Province, Argentina. **A:** Highland grasslands. **B:** Small patches of monospecific alder woodlands (*Alnus acuminata*) of the Yungas Ecoregion.

the location in the valley. The average annual temperature is 15°C, with 1.1°C the average minimum temperature for the coldest month and 29.1°C the average maximum for the warmest month. Annual rainfall varies between 600 and 700 mm and it is concentrated in the summer months (December to March).

The environment around the site corresponds to the highland grasslands of the Yungas Ecoregion (*sensu* Burkart et al. 1999), characterized by dense grasslands dominated by species of the genera *Festuca*, *Deyeuxia*, *Chloris*, *Lamphorothyrsus*, *Paspalum*, *Anthaenanthiopsis*, and *Stipa*; and small patches of monospecific alder woodlands (*Alnus acuminata*) located approximately 1.5 km from the collecting site (Figure 3) (Cabrera 1976, Vervoorst 1982). Nowadays, extensive cattle grazing have modified most of the natural grasslands, which are confined to the steep slopes.

In spite of a relative low number of owl pellets recovered in the site ($n$ = 57), many other species of non-volant small mammals were identified in the whole sample, including the sigmodontines *Abrothrix illutea* (Minimal Number of Individuals [MNI] = 7), *Akodon caenosus* (MNI = 4), *A. simulator* (MNI = 2), *A. spegazzinii* (MNI = 22), *Necromys lactens* (MNI = 2), *Oligoryzomys brendae* (MNI = 4), *Oligoryzomys* cf. *flavescens* (MNI = 6), *Calomys musculinus* (MNI = 20), *Graomys* sp. (MNI = 1), *Phyllotis osilae tucumanus* (MNI = 22), *Reithrodon auritus* (MNI = 8), and *Andinomys edax* (MNI = 18); the caviomorphs *Cavia tschudii* (MNI = 18), *Galea leucoblephara* (MNI = 15), and *Ctenomys* sp. (MNI = 2), and the didelphid *Thylamys* sp. (MNI = 3) (Figure 4). The record of seventeen species in one small owl pellet sample is remarkable and highlights the area of Las Chacritas as one of the localities with the highest diversity of small non-volant mammals in northwestern Argentina (Jayat et al. 2011; Ferro 2013). There are localities in northwestern Argentina with very rich small non-volant mammal communities, such as those from Hualinchay (Tucumán province), where twelve species were registered (Jayat et al. 2008b), or the Las Capillas area (Jujuy province), with fifteen species documented (Ferro 2010). Thus, we think it will be hard to find localities with much higher species richness in the region.

Some of the species recorded in this locality are also remarkable and worth mentioning. For instance, we documented the presence of *Reithrodon auritus*, a species found in northwestern Argentina in only five isolated localities (in Catamarca and Tucumán provinces) at highland grasslands between 1,950 and 3,000 m elevation (Jayat et al. 2006, 2008b), together with *O. wayku* in the same area. The record of *Cavia tschudii* is also noteworthy due to the few known localities for the species in the northwestern region, being the second one for Catamarca province (see Ortiz and Jayat 2012). The high diversity observed in Las Chacritas area is probably a consequence of the environmental complexity and the steep altitudinal gradient (ranging from 2,000 to 2,400 m elevation), with Bosque Montano, high altitudinal grasslands, and semiarid environments coexisting in a relatively reduced area (approximately 25 km²).

Our experience in the area suggests that more species of small non-volant mammals could be present in Las Chacritas. *Necromys lasiurus* was recorded at 10 km southeastern the collection site (Jayat et al. 2008b) and we expect that at least two species of *Thylamys* (*T. pallidior* and *T. pulchellus*) coexist in the nearby area (Giarla et al. 2010, 2014; Palma et al. 2014). *Phyllotis anitae*, a species highly associated with Bosque Montano in southern Yungas of Tucumán province (Jayat et al. 2007), could also be present. Despite the fact that the small non-volant mammals of the Yungas upper belts are among the best studied in northwestern Argentina (Jayat et al. 2007, 2008a, 2008b, 2011; Ferro and Barquez 2009; Ferro 2013), the records from Las Chacritas indicate how little we know about the diversity and distribution of the group in the region.

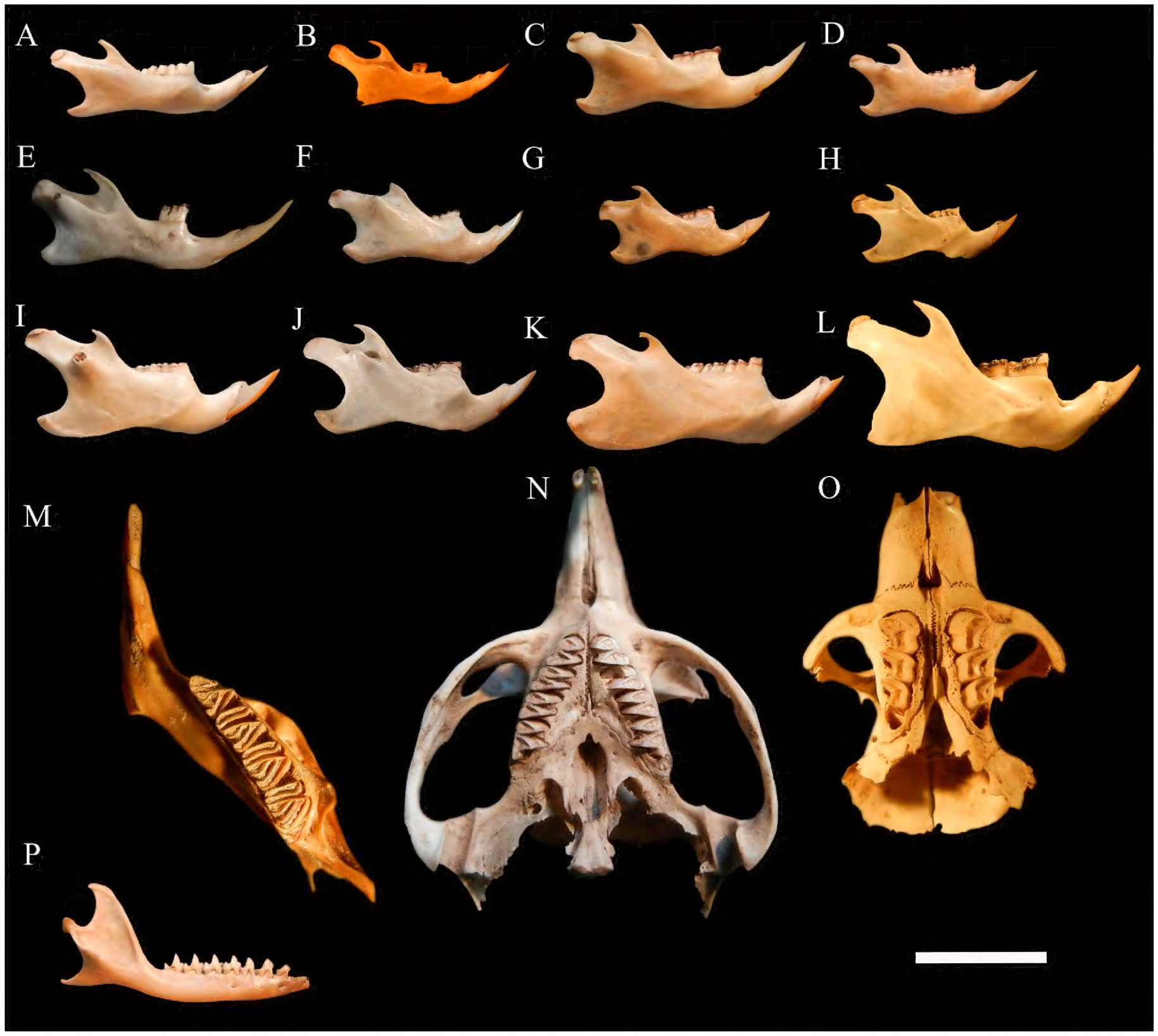


Figure 4. Species of other non-volant small mammals identified in the owl pellet sample. A: *Abrothrix illutea* (CEI 102-1), left hemimandible in lateral view (horizontally reflected). B: *Akodon caenosus* (CEI 102-2), left hemimandible in lateral view (horizontally reflected). C: *Akodon simulator* (CEI 102-3), right hemimandible in lateral view. D: *Akodon spegazzinii* (CEI 102-4), right hemimandible in lateral view. E: *Necromys lactens* (CEI 102-5), right hemimandible in lateral view. F: *Oligoryzomys brendae* (CEI 102-7), right hemimandible in lateral view. G: *Oligoryzomys* cf. *flavescens* (CEI 102-8), right hemimandible in lateral view. H: *Calomys musculinus* (CEI 102-9), left hemimandible in lateral view (horizontally reflected). I: *Graomys* sp. (CEI 102-10), right hemimandible in lateral view. J: *Phyllotis osilae tucumanus* (CEI 102-11), left hemimandible in lateral view (horizontally reflected). K: *Reithrodon auritus* (CEI 102-12), left hemimandible in lateral view (horizontally reflected). L: *Andinomys edax* (CEI 102-13), left hemimandible in lateral view (horizontally reflected). M: *Cavia tschudii* (CEI 102-14), right hemimandible in occlusal view. N: *Galea leucoblephara* (CEI 102-15), incomplete skull in ventral view. O: *Ctenomys* sp. (CEI 102-16), incomplete skull in ventral view. P: *Thylamys* sp. (CEI 102-17), right hemimandible in lateral view. Scale bar: 10 mm.

## ACKNOWLEDGEMENTS

Support was provided by Instituto de Ambiente de Montaña y Regiones Áridas, Universidad Nacional de Chilecito (UNdeC), Instituto Superior de Correlación Geológica (CONICET), Cátedra de Paleontología (UNT), and Instituto de Ecología Regional, Laboratorio de Investigaciones Ecológicas de Las Yungas (UNT). Financial support was provided by a CIUNT grant of Universidad Nacional de Tucumán (26 G/434) to PEO.

## LITERATURE CITED

Barquez, R.M. 1976. Nuevo registro de distribución de *Oxymycterus paramensis* (Mammalia, Rodentia, Cricetidae). Neotropica 22: 115–116.

Brown, A.D., H.R. Grau, L.R. Malizia and A. Grau. 2001. Argentina; pp. 623–659, in M. Kappelle and A.D. Brown (eds.). Bosques Nublados del Neotrópico. Costa Rica: Instituto Nacional de Biodiversidad (INBio).

Burkart, R., N.O. Bárbaro, R.O. Sánchez and D.A. Gómez. 1999. Eco-regiones de la Argentina. Administración de Parques Nacionales, PRODIA. Buenos Aires. 42 pp. http://www.sib.gov.ar/archivos/Eco-Regiones_de_la_Argentina.pdf

Cabrera, A. 1976. Regiones fitogeográficas Argentinas. Enciclopedia Argentina de Agricultura y Jardinería 2. 85 pp.

Díaz, M.M., J.K. Braun, M.A. Mares and R.M. Barquez. 2000. An update of the taxonomy, systematics, and distribution of the mammals of Salta province, Argentina. Occasional Papers of the Sam Noble Oklahoma Museum of Natural History, University of Oklahoma 10: 1–52.

Díaz, M.M. and R.M. Barquez. 2007. Los mamíferos silvestres de la

Provincia de Jujuy, Argentina: sistemática y distribución; pp. 417–578, in: D.A. Kelt, E.P. Lessa, J. Salazar-Bravo and J.L. Patton (eds.). The Quintessential Naturalist: Honoring the Life and Legacy of Oliver P. Pearson. California: University of California Publications in Zoology 134.

Ferro, L.I. 2010. Micromamiferos del noroeste argentino: gradientes altitudinales y la transición bosque puna monte [PhD thesis]. Universidad Nacional de Tucumán, Argentina. 181 pp.

Ferro, L.I. 2013. Rodent endemism, turnover and biogeographical transitions on elevation gradients in the northwestern Argentinian Andes. Mammalian Biology 78: 322–331.

Ferro, L.I. and R. M. Barquez. 2009. Species richness of nonvolant small mammals along elevational gradients in Northwestern Argentina. Biotropica 41(6): 759–767. doi: 10.1111/j.1744-7429.2009.00522.x

García-Olaso, F. 2008. Evaluación de los caracteres diagnósticos de *Oxymycterus josei* Hoffmann, Lessa y Smith, 2002 (Rodentia: Cricetidae) con comentarios sobre la diferenciación de las especies uruguayas del género. Mastozoología Neotropical 15(1): 117–123. http://www.sarem.org.ar/wp-content/uploads/2012/11/SAREM_MastNeotrop_15-1_11_Garcia-Olaso.pdf

Giarla, T.C., R.S. Voss, and S.A. Jansa. 2010. Species limits and phylogenetic relationships in the didelphid marsupial Genus *Thylamys* based on mitochondrial DNA sequences and morphology. Bulletin of the American Museum of Natural History 346: 67 pp. http://hdl.handle.net/2246/6094

Giarla, T.C., R.S. Voss, and S.A. Jansa. 2014. Hidden diversity in the Andes: Comparison of species delimitation methods in montane marsupials. Molecular Phylogenetics and Evolution 70: 137–151. doi: 10.1016/j.ympev.2013.09.019

Hershkovitz, P. 1962. Evolution of Neotropical cricetine rodents (Muridae) with special reference to the Phyllotine group. Fieldiana, Zoology 46: 1–524.

Jayat, J.P., G. D'Elia, U.F.J. Pardiñas, M.D. Miotti, and P.E. Ortiz. 2008a. A new species of the genus *Oxymycterus* (Mammalia: Rodentia: Cricetidae) from the vanishing Yungas of Argentina. Zootaxa 1911: 31–51.

Jayat, J.P., G. D'Elia, U.F.J. Pardiñas, and J.G. Namen. 2007. A new species of *Phyllotis* (Rodentia, Cricetidae, Sigmodontine) from the upper montane forest of the Yungas of northwestern Argentina; pp. 775–798, in: D.A. Kelt, E.P. Lessa, J. Salazar-Bravo and J.L. Patton (eds.). The quintessential naturalist: honoring the life and legacy of Oliver P. Pearson. University of California Publications in Zoology 134.

Jayat, J.P., P.E. Ortiz, and M.D. Miotti. 2008b. Distribución de sigmodontinos (Rodentia: Cricetidae) en pastizales de neblina del noroeste argentino. Acta Zoológica Mexicana 24: 137–177. http://www.scielo.org.mx/pdf/azm/v24n3/v24n3a10.pdf

Jayat, J.P., P.E. Ortiz, S. Pacheco, and R.F. González. 2011. Distribution of sigmodontine rodents in northwestern Argentina: main gaps in information and new records. Mammalia 75(1): 53–68.

Jayat, J.P., P.E. Ortiz, P. Teta, U.F.J. Pardiñas, and G. D´Elia. 2006. Nuevas localidades argentinas para algunos roedores sigmodontinos (Rodentia: Cricetidae). Mastozoología Neotropical 13(1): 51–67.

Mares, M.A., R.A. Ojeda, J.K. Braun, and R.M. Barquez. 1997. Systematics, distribution, and ecology of the mammals of Catamarca province, Argentina; pp. 89–141, in: T.L. Yates, W.L. Gannon and D.E. Wilson (eds.). Life among the muses: papers in honor of James S. Findley. Albuquerque: Museum of Southwestern Biology, University of New Mexico.

Oliveira, J.A. and P.R. Gonçalves. 2015. Genus *Oxymycterus* Waterhouse, 1837; pp. 247–268, in: J.L. Patton, U.F.J. Pardiñas, and G. D'Elía (eds.). Mammals of South America, Volume II, Rodents. Chicago/London: University of Chicago Press.

Ortiz, P.E. and J.P. Jayat. 2012. Range extension of *Cavia tschudii* Fitzinger, 1867 (Mammalia: Caviidae) and first record in Catamarca, northwestern Argentina. Check List 8(4): 782–783. http://www.checklist.org.br/getpdf?NGD239-11

Ortiz, P.E. and J.P. Jayat. 2013. Primer registro fósil para dos especies de sigmodontinos (Rodentia, Cricetidae) endémicas del extremo sur de las Yungas de Argentina. Ameghiniana 50(6): 598–604. doi: 10.5710/AMGH.10.06.2013.673

Palma, R.E., D. Boric-Bargetto, J.P. Jayat, D.A. Flores, H. Zeballos, V. Pacheco, R.A. Cancino, F.D. Alfaro, E. Rodriguez-Serrano, and U.F.J. Pardiñas. 2014. Molecular phylogenetics of mouse opossums: new findings on the phylogeny of *Thylamys* (Didelphimorphia, Didelphidae). Zoologica Scripta 4(3): 217–234. doi: 10.1111/zsc.12051

Pardiñas, U.F.J., G. D'Elía, P. Teta, P.E. Ortiz, J.P. Jayat, and S. Cirignoli. 2006, Akodontini Vorontzov, 1959 (*sensu* D'Elía, 2003); pp. 146–166, in: R.M. Barquez, M. Díaz, and R. Ojeda (eds.). Mamíferos de Argentina: Sistemática y Distribución, Mendoza: Sociedad Argentina para el Estudio de los Mamíferos.

Thomas, O. 1921. On a further collection of mammals from Jujuy obtained by Sr. Budin. Annals and Magazine of Natural History 9(8): 608–617.

Thomas, O. 1925. The Spedan Lewis South American Exploration I. On Mammals from Southern Bolivia. Annals and Magazine of Natural History 15(9): 575–582. doi: 10.1080/00222932508633250

Vervoorst, F. 1982. Noroeste. Conservación de la Vegetación Natural de la República Argentina. Serie Conservación de la Naturaleza 2: 9–24.

**Authors' contribution statement:** Sd'H and PEOrtiz collected the material; Sd'H and CR dissected the pellets; PEO, Sd'H and JPJ identified the specimens; Sd'H, PEO, JPJ and CR wrote the text and prepared the figures.

**Received:** 7 August 2014
**Accepted:** 18 July 2015
**Academic editor:** Ana Paula Carmignotto

## Appendix 1

Specimens measured and included in Table 1. Localities are listed in alphabetic order.

***Oxymycterus paramensis*** (11). ARGENTINA: Jujuy province: Abra de Cañas, El Monolito 23°24′ S, 064°54′ W (CML 1761, male age class 5); Cerro Hermoso 23°34′ S, 064°51′ W (MACN 19519, male age class 4); La Antena, Sierra del Centinela, south El Fuerte, 2,350 m 24°17′ S, 064°23′ W (JPJ 961, male age class 5). Salta province: Abra de Ciénaga Negra, approximately 3 km SE, 3,090 m 23°19′ S, 064°53′ W (JPJ 730, female age class 4; JPJ 732, female age class 5; JPJ 733, male age class 4); approximately 21 km (by route) WNW de Vespucio, on Río Seco, 536 m 22°31′ S, 064°00′ W (JPJ 1483, female age class 5); Pampa Verde, approximately 8 km WNW Los Toldos and south Cerro Bravo, 2,400 m 22°17′ S, 064°48′ W (CML 7251, male age class 4; JPJ 343, male age class 5); Parque Nacional Baritú, Finca Jakulica, angosto del Río Pescado, 650 m 22°40′ S, 064°34′ W (CML 5507, male age class 4); Parque Nacional Baritú, Finca Yakulica, bosque de helechos 22°39′ S, 064°31′ W (CML 5505, male age class 4).

***Oxymycterus wayku*** (3). ARGENTINA: Tucumán province: approximaely 10 km south Hualinchay, on the road to Lara, 2,316 m 26°19′ S, 065°36′ W (CML 7250, male age class 4); Los Sosa 27°04′ S, 065°39′ W (MACN 20254; age class 4); cranial remains recovered from owl pellets from Highway 1, approximately 3 km north of Las Chacritas, 2,025 m 27°38′ S, 065°57′ W (CEI 102-6; age class 4).